AMENDMENTS TO THE CLAIMS

Please substitute the following text for the pending claims of the same number.

1. (ORIGINAL) A method of separating gaseous pollutants, such as sulphur dioxide, from hot process gases, such as flue gases, in which method the process gases are passed through a contact reactor (22; 322), in which a particulate absorbent material reactive with the gaseous pollutants is introduced in a moistened state into the process gases in order to convert the gaseous pollutants into separable dust, after which the process gases are passed through a dust separator (10), in which dust is separated from the process gases and from which the cleaned process gases are discharged, characterised in that

a circulating part of the dust separated in the dust separator (10) is cooled in a first step by being brought into direct contact with a cooling fluid,

the cooled dust is mixed in a second step with a gas containing water vapour, said gas having a saturation temperature that is higher than the temperature of the cooled dust, and

the dust moistened by condensation of the water vapour is introduced as absorbent material into the contact reactor (22; 322) to be mixed with the process gases.

2. (ORIGINAL) A method as claimed in claim 1, in which the cooled dust contains burnt lime, CaO, which during at least one of said first and second step at least partly is subject to slaking to slaked lime, $Ca(OH)_2$.

3. (ORIGINAL) A method as claimed in claim 1 or 2, in which fresh absorbent material is continuously supplied to the process gases, part of the dust separated in the dust separator (10) being removed without being brought into direct contact with the cooling fluid.

4. (AMENDED) A method as claimed in ~~any one of the preceding claims~~ claim 1, in which the dust is cooled in said first step by being mixed with water, which has a lower temperature than the dust separated in the dust separator (10).

5. (ORIGINAL) A method as claimed in claim 4, in which said circulating part of the dust separated in the dust separator is introduced into a mixer (24; 124; 224), which has an inlet (32; 132; 232) at a first end (26; 126; 226) and an outlet (40) at a second end (28; 128), said circulating part of the dust separated in the dust separator (10) being passed horizontally through the mixer (24; 124; 224) from the first end (26; 126 226) to the second end (28; 128) and being mixed with water and cooled in a cooling zone (68; 168; 268) adjacent to the first end (26; 126; 226) of the mixer (24; 124; 224), so as then to be mixed, in a moistening zone (80; 180; 280) adjacent to the second end (28; 128) of the mixer (24; 124; 224), with the gas containing water vapour.

6. (AMENDED) A method as claimed in ~~any one of the preceding claims~~ claim 1, in which the dust is cooled in said first step by mixing with air which has a lower temperature than the dust separated in the dust separator (10).

7. (ORIGINAL) A method as claimed in claim 6, in which the air is at least partly supplied to a collecting vessel (214) connected to the dust separator (10) and intended for collecting separated dust.

8. (AMENDED) A method as claimed in ~~any one of the preceding claims~~ claim 1, in which water is supplied directly to the contact reactor (322) and is mixed with the moistened dust and the process gases.

9. (AMENDED) A method as claimed in ~~any one of the preceding claims~~ claim 1, in which the first step is carried out during a period of 2-600 s on average, and that the cooled dust is then subjected to the second step within 10 s.

10. (AMENDED) A method as claimed in ~~any one of the preceding claims~~ claim 1, in which the second step is carried out during a period of 2-30 s on average, and that the moistened dust is then introduced into the process gases within 5 s.

11. (AMENDED) A method as claimed in ~~any one of the preceding claims~~ claim 1, in which said gas contains air and water vapour which are mixed to the desired saturation temperature.

12. (AMENDED) A method as claimed in ~~any one of the preceding claims~~ claim 1, in which the gas, which contains water vapour, has a saturation temperature which is 5-30°C higher than the temperature of the cooled dust.

13. (ORIGINAL) A mixer for moistening a particulate dust, which can react with gaseous pollutants in a process gas, such as a flue gas, in order to form a separable dust, characterised in that the mixer (24; 124; 224) has a first end (26; 126; 226) and a second end (28; 128) and is divided into two zones, of which a first zone is a cooling zone (68; 168; 268) which is located at the first end (26; 126; 226) and which is provided with a means (62, 64; 162, 164, 166, 167; 262, 264) for supplying a cooling fluid, and of which a second zone is a moistening zone (80; 180; 280) which is located at the second end (28; 128) and which is provided with a means (70; 170; 270) for supplying a gas containing water vapour, the mixer (24; 124; 224) being adapted first to pass dust from an inlet (32; 132; 232) for dust, located at the first end (26; 126; 226), through the cooling zone (68; 168; 268) and, in the cooling zone, supply a cooling fluid having a lower temperature than the dust, and mix the dust with this fluid, then pass the dust through the moistening zone (80; 180; 280) and, in the moistening zone, supply a gas containing water vapour and having a saturation temperature which is higher than the temperature of the cooled dust, and mix this gas with the cooled dust, and then introduce the moistened dust as absorbent material into the process gas through an outlet (40) located at the second end (28; 128).

14. (ORIGINAL) A mixer as claimed in claim 13, in which the means (62, 64; 162, 164; 262, 264) for supplying a cooling fluid is arranged to supply water to the dust.

15. (ORIGINAL) A mixer as claimed in claim 13 or 14, in which the mixer has a means (166) for supplying cooled compressed air to the cooling zone (168).

16. (ORIGINAL) A device for separating gaseous pollutants, such as sulphur dioxide, from hot process gases, such as flue gases, said device having a contact reactor (22; 322), through which the process gases are intended to be passed and which has means (24, 40; 124; 224; 324; 340) for introducing a particulate absorbent material in a moistened state, which is reactive with the gaseous pollutants, into the process gases for the purpose of converting the gaseous pollutants into separable dust, and a dust separator (10) which is adapted to separate the dust from the process gases and discharge the cleaned process gases, c h a r a c t e r i s e d in that the device has a cooling zone (68; 168; 268; 368) for cooling at least a circulating part of the dust separated in the dust separator (10), means (62, 64; 162, 164, 166; 218, 262, 264; 318) for supplying a cooling fluid to the cooling zone (68; 168; 268; 368) for cooling the dust by direct contact between the fluid and the dust, means (52; 152; 330) for feeding the cooling dust to a moistening zone (80; 180; 280; 380), means (70; 170; 270; 370) for supplying a gas containing water vapour and having a saturation temperature which is higher than the temperature of the cooled dust, to the cooled dust in order to moisten this by condensation of water vapour, and means (40; 340) for feeding the moistened dust to the contact reactor (22; 322).

17. (ORIGINAL) A device as claimed in claim 16, in which a means (362, 364) is arranged to inject water into the contact reactor (322) and mix this with the moistened dust and the process gases.